NUE - Novel Universal Ensemble Capability for Overset Grids, Phase I
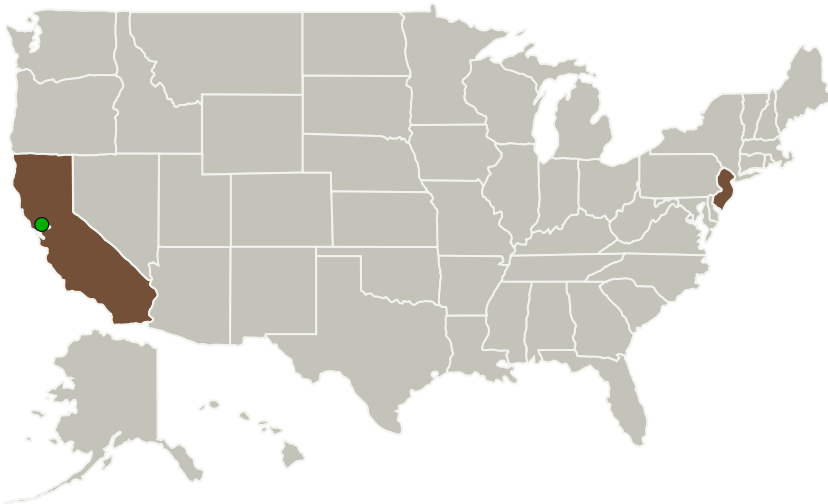
Completed Technology Project (2010 - 2010)

Project Introduction

Intelligent Light makers of the FieldView CFD/CAE Post-processing tool, proposes to develop NUE (pronounced noo-ae) - a Novel and Universal capability that manages an Ensemble of overset grid tools. NUE's assembly, flow solver and post-processing components accept grids from ANY grid generation package of ANY grid type to facilitate the ease of use of the overset grid methodology. Its components are coupled through an API or a Python Software Interface Framework (SIF) and utilize a standardized output based upon an extended version of pyCGNS. The Grid Assembly utilizes components from FieldView via a python wrapped server process that allows the user to launch grid assembly, flow solvers and to detect flaws in the overset grid system such as orphans points or by using FieldView advanced post-processing features to identify regions in need of grid refinement. FieldView can then create objects, such as CAD Surfaces, which the user can readily load into their grid generator to assist in overset grid modification or refinement. The user would be able to launch the flowsolver from within FieldView and then have automated reports available in a browser window. NUE represents a novel and standardized capability that allows all the components of the overset ensemble of tools to interact in a consistent manner - reducing the overall time that practitioners must spend in managing their simulations.

Primary U.S. Work Locations and Key Partners

NUE - Novel Universal Ensemble Capability for Overset Grids, Phase I

Table of Contents

Organizations Performing Work	Role	Type	Location
JMSI, Inc. dba Intelligent Light	Lead Organization	Industry	Rutherford, New Jersey
●Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	New Jersey

Project Transitions

▶ **January 2010:** Project Start

✔ **July 2010:** Closed out

Closeout Documentation:
- Final Summary Chart*(https://techport.nasa.gov/file/139304)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

JMSI, Inc. dba Intelligent Light

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management
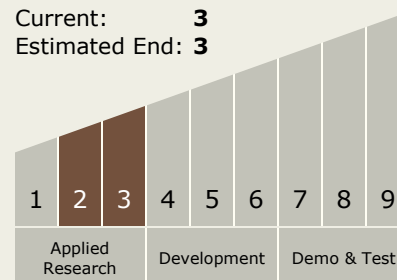
Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Earl P Duque

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**

1	2	3	4	5	6	7	8	9
			Applied Research		Development			Demo & Test

TechPort

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For more information and an accessible alternative, please visit:
https://techport.nasa.gov/view/8155

Page 2

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  └ TX12.3 Mechanical Systems
    └ TX12.3.7 Mechanism Life Extension Systems

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System